APPENDIX A

SCOPE OF SERVICES

MARICOPA ASSOCIATION OF GOVERNMENTS (MAG)

SOUTHEAST MARICOPA / NORTHERN PINAL COUNTY AREA TRANSPORTATION STUDY

I. TASKS TO BE PERFORMED FOR THE STUDY

The project can be broken down into three phases: (1) review of existing conditions and trends, and identification of future transportation demand and issues, (2) develop and evaluate transportation improvement or investment options, and (3) select and refine a preferred option for consideration. Agency, public and other stakeholder consultation is a key consideration and will occur throughout the project. Coordination with related studies being conducted for the Regional Transportation Plan is critical.

Project deliverables include working papers for each major task, draft and final reports, and an electronic database. Extensive use of geographic information systems (GIS) for mapping of project findings is required. All transportation system and related data that are developed or assembled for this project will be mapped and provided electronically in agreed standard database or GIS format.

Specific tasks are outlined below.

Task One: Revise Scope of Work

The CONSULTANT will refine the scope of work, timeline schedule, meeting dates and study process, based upon the field tour, the kickoff meeting and discussions with MAG staff. During the course of the study, additional changes to the scope of work may be needed to respond to changing conditions.

The study area will be defined in this task. Note the area for which transportation modeling will be conducted may be larger than that for which recommendations for new transportation infrastructure will be made. In a preliminary review with local agency representatives, the study area boundaries tentatively identified included Superior, SR 79/US 89 on the east, Eloy/below I-8 on the south, Maricopa County Boundary on the west, and the South Mountain freeway corridor /101L/Superstition Freeway Corridor on the north. The study area tentatively suggested includes nearly all of the Gila River Indian Community. Pinal County later suggested that the study area within that County be focused on the section north and west of Florence and Coolidge. A key product of Task One therefore will be a consensus of the stakeholders on the appropriate study area.

The consultant will generate and assemble relevant data and information to assist in defining the study area. As part of Task One, and to assist the decision making process on the study area, the CONSULTANT will arrange and conduct a guided tour of the study area. The purpose of the tour will be to brief decision-makers and staff on the growth issues in the area, as well as the need for interagency cooperation and coordination. The tour will also provide an opportunity to obtain input on decision-maker issues and concerns. The CONSULTANT will be responsible for providing transportation, preparing the tour itinerary and guiding the tour. Working with the CONSULTANT to identify participants, MAG and CAAG will invite tour participants.

Additionally, as part of this review of the scope of work, preliminary discussion of key elements such as the consultation plan, coordination plan, GIS database, website, and evaluation criteria will be reviewed.

Task One Products:
- Revised scope of work and study schedule.
- Study area boundaries and map.
- Decision-maker and staff tour of study area.

Task Two: Consultation

The CONSULTANT will develop a detailed agency, public and stakeholder consultation plan at the start of the study for review and approval by the MAG Project Manager. The goal of the consultation plan is to develop a consensus among stakeholders that the study is thorough, addresses their needs and concerns, provides a vision for the area and will result in a plan of investments for the area that can be implemented.
The consultation plan will solicit and encourage input from all components of the community including agency staff, the general public, business leaders, and elected officials. The analysis and reporting of results will consider the interests of all residents of the region that may be affected by the study recommendations. The consultation plan will therefore be designed to inform and obtain representative input from all affected residents.

The consultation process will be coordinated with the ongoing Regional Transportation Plan public involvement program at MAG, including the consultation processes for other area and background studies being conducted simultaneously with this study, public involvement programs conducted by CAAG and, as appropriate, local jurisdictional consultation processes. The website described below will be a primary mechanism for coordinating information among the various studies, and therefore coordination on the consultation plans and website designs, schedules for updates and timely sharing of information to the extent possible will be required. This coordination activity should be addressed in the Coordination Plan to be developed in the next task as well.

As part of Task Two, the specific activities that the CONSULTANT will perform include but are not limited to:

- Develop a stakeholder database specifically for the Southeast Maricopa and Northern Pinal County area, with special effort to identify and include Title IV/Environmental Justice populations. Existing electronic databases will be used as a starting point.

- Develop and implement an engaging, informative, and interactive state-of-the-art website for the project.
  Website features will include (but are not limited to):
  - News - current information about project activities, progress, and work results.
  - Add to Mail List page - enabling users to add their name, address and email to the project stakeholder database.
  - Stakeholder Survey(s) - enabling users to complete and submit project stakeholder surveys via the project web page.
  - Project Calendar - listing upcoming meetings, events, and publication dates.
  - Links to related RTP studies and web pages. To the extent feasible, use the website to show common issues and resolutions between the studies. This may be facilitated by coordinating the website design and content with the other studies. e.g. having a shared page listing common issues and showing how they are being coordinated.
  - Glossary - definitions of common transportation terms and abbreviations
  - Frequently Asked Questions (FAQs) page - a listing of answers to provide users with facts and educational information.

  The website will become the property of MAG and will ultimately reside on the MAG website, not the CONSULTANT website. The website will be operated by the CONSULTANT and linked to and from the MAG website in the course of the project, and will reside on the MAG website thereafter. Once the project is completed, the CONSULTANT must provide MAG with all of the website code and files. The project website must be up and running on the MAG website with full MAG update capability at the end of the contract.

  The CONSULTANT must coordinate with the MAG Project Manager and MAG Website Manager in developing the website to be completely compatible with the MAG system, policies and standards. The project website must be designed by the consultant to be fully operational on the MAG website. The CONSULTANT will obtain MAG Project Manager approval regarding the location, content and presentation of the website. All external links will be subject to approval by the MAG Project Manager.
  The website must include an explicit privacy policy that protects the interests of visitors to the site, for example by making it a strict policy to not sell contact information obtained from the site. Commercial advertising is not permitted on the site. The website will prominently display the MAG logo. The website will not display logos or marketing materials for parties not approved by MAG as part of the project.

- Develop a consultation schedule and review with the study team to coordinate upcoming short- and long-term consultation activities for the MAG Regional Transportation Plan.

- Develop materials for distribution for consultation purposes.

- Develop a list of interviews to be conducted by the CONSULTANT with agency staff, elected officials and community stakeholders to learn about major issues early and throughout in the study process.
  Develop, conduct and analyze surveys/interviews to identify and rank key criteria used to evaluate options and/or to comment on final option(s).

- Conduct at least four public meetings (at least two each in Maricopa County and Pinal County), including the development and presentation of study information, preparation of display materials, recording of comments and attendance, and producing meeting summaries.

  - The public meetings will be scheduled to occur at a minimum at two key points in the study process: (1) between study phases 1 and 2, and (2) between study phases 2 and 3. The study phases are groupings of tasks to accomplish the following: (1) Phase 1 covers review of existing conditions and trends, and identification of future transportation demand and issues, (2) Phase 2 addresses developing and evaluating transportation improvement or investment options, and (3) Phase 3 will identify and refine a preferred option.

  - The CONSULTANT will prepare meeting advertisements and meeting notices for review and approval by the MAG Project Manager before they are released. As needed, the meeting notices will be prepared in Spanish and a Spanish-speaking staff person will be available at the public meetings to assist in answering questions. MAG will identify meeting locations, make arrangements for meeting rooms and distribute meeting notices.

- Conduct at least six Agency/Stakeholder Forums, as follows: (1) Scoping, (2) Current/Future Conditions and Issues Identifications, (3) Alternatives Identification, (4) Alternatives Evaluation, (5) Preliminary Recommendations, and (6) Final Recommendations. The CONSULTANT will develop and present study information, prepare display materials, record comments and attendance, and produce meeting summaries. MAG will identify meeting locations, make arrangements for meeting rooms, and distribute meeting notices.

- Prepare and present materials on study findings and recommendations to MAG committees, including the Transportation Review Committee, the Management Committee and the Regional Council.

- Prepare and present materials on study findings and recommendations for up to twelve additional study presentations, including presentations to CAAG committees, elected officials, and community groups in Maricopa and Pinal Counties.

- Produce regular public information materials: At least three quarterly newsletters and six public information bulletins.

- All activities and findings of the consultation process will be compiled and analyzed in a Consultation Summary Report. In addition to responding to specific comments that are received in the course of this project, the analysis will assess the consultation process (including the website) used in this project in obtaining input. The analysis will specifically address how well the results represent the interests of all of the residents and other stakeholders in the area and will also make recommendations for consultation activities (including website design and features) for future studies.

Task Two Products:
- Consultation Plan and schedule, developed in concert with the Coordination Plan in the next task.
- Stakeholder database.
- Presentation Graphics and publications.
- Project website. It is anticipated that this website in whole or in part will be used as a template for future consultation activities on other projects so the computer source code for the website will be the property of MAG and the other project sponsors and must be delivered to MAG.
- Stakeholder interviews.
- Up to 25 public sessions, including at least four public meetings (with meeting materials and summaries); at least six agency/stakeholder forums (with forum materials and summaries); and at least twelve additional presentations to MAG and CAAG committees and other groups in Maricopa and Pinal Counties.
- At least three newsletters and six public information bulletins.
- Consultation Summary Report.

Task Three: Regional Plan Coordination

Coordination of this area study with regional planning processes and as appropriate other background or area studies is critical. The objective of this coordination is primarily to ensure that the direction of this area study remains consistent with that of the ongoing MAG Regional Transportation Plan process and other area studies, as well as CAAG regional planning processes. The CONSULTANT will perform two key sub-tasks for this coordination effort: (1) documentation of related studies, plans and programs, and (2) coordination and collaboration on the regional processes.

Sub-task 3(a): Document Related Studies, Plans and Programs

Coordination with and recommendation for integration of concepts or policy recommendations from other related regional, area, corridor studies and programs is required. A key initial step therefore in this coordination process will be the documentation of existing and ongoing related studies, plans and programs and their key findings or implications for this area study and the regional planning processes. The identification and acquisition of all relevant studies, plans and programs for this project will be the responsibility of the CONSULTANT. A listing of the documents to be reviewed will be prepared early in the study process and provided to the study team for comments.

The CONSULTANT will document existing studies, plans and programs and their respective findings or implications for all modes. Previous, ongoing or planned regional, area, corridor, multi-modal, socioeconomic, and environmental studies should be considered. Include studies, plans, and programs for roadways, transit facilities and service, and other modes or related options including bicycle, pedestrian, ITS, work at home, and demand management.

Sub-task 3(b): Regional Transportation Plan Coordination and Collaboration

The CONSULTANT will prepare a detailed coordination plan at the start of this project for review and approval by the MAG Project Manager. The coordination plan will detail the coordination and collaboration activities with the current regional planning processes, including its background area studies, the development of the State Transportation Plan, and local agencies / plans. The plan will also address other related studies, plans and programs identified and reviewed in the documentation sub-task above.

In addition to general coordination, the plan will coordinate major work tasks such as the Major Issues Task with the MAG RTP process. Other coordination activities include the consultation processes, including the analyses and response to input received, and the website, and development of the GIS database systems between the MAG RTP area studies. After the coordination plan has been approved by the MAG Project Manager, the consultant will implement the plan.

A major part of the coordination will be participation in at least four meetings conducted with MAG and MAG contractors to assess transportation concepts for potentially broader application.

Task Three Products:
- Working Paper #1 which summarizes related studies and findings.
- Coordination Plan which ensures compatibility with the MAG RTP process, background studies, databases, website, and other ongoing planning activities, including meetings, minutes, and notes.
- GIS files as appropriate from the literature review.

Task Four: Document Current and Projected Socioeconomic Conditions

Socioeconomic data for the study area will be inventoried, obtained, reviewed, updated as needed, documented in GIS format and also prepared for later use in study tasks including specifically the transportation demand modeling. This task includes documentation of the environmental justice and Title VI populations. This analysis will cover both the study and transportation modeling area within Maricopa County and as appropriate Pinal County.

The CONSULTANT will ensure that the base data and projections provided to MAG are consistent with the policies, assumptions and forecasts of the local jurisdictions involved. Overall responsibility for data collection, preparation (including all scenarios and forecasts) and quality control rests with the CONSULTANT.

Sub-task 4(a): General Socioeconomic Data

Deliverables for this task include GIS coverages for the study / transportation modeling areas and input files for the transportation demand modeling. The Consultant will work closely with MAG staff and participating jurisdictions on developing the current and projected socioeconomic conditions for the study / modeling areas.

First, an inventory of existing and available GIS information will be conducted, and this information will be reviewed to determine its compatibility and suitability for use with the MAG socioeconomic data / GIS systems. All available recent population, dwelling, household income, employment, developmental area, and special generators data within the study area will be inventoried and collected. Recently collected data will be compared to Census data to identify and correct deficiencies and to develop a revised database.

Following a Consultant review of the available information and needs with the Project , Systems Analysis Program and Information Services Managers, and other project participants as appropriate, the specific GIS polygon coverages to be developed in this study will be finalized by the MAG Project Manager and may include existing land use, general plans, future developments, population by category and employment by sector.

The projections developed under this task will be used in later analyses of future transportation demand. The CONSULTANT will therefore work with MAG to define TAZs (area covered and boundaries) in the Pinal County portion of the study area in preparation for the MAG expansion of the regional transportation modeling area. The CONSULTANT will provide all socio-economic data required for the MAG travel model by traffic analysis zone (TAZ). The MAG role will be limited to review of the work by the CONSULTANT, and provision of data held by or readily available to MAG.

The CONSULTANT will collect census data from the Department of Economic Security (DES), review existing economic reports and contact member agencies, local governments, organizations, community leaders, and other groups and individuals to obtain information for this task. Specific socio-economic variables for which the CONSULTANT will provide the needed data include (but are not limited to) the following that are used for the transportation model:

- Year
- Traffic Analysis Zone (TAZ)
- District
- MPA
- Resident population in households
- Resident population in Group Quarters
- Transient population
- Seasonal population
- Number of Residential households

- Number of Group Quarter households
- Number of transient households
- Number of seasonal households
- Other employment
- Public employment
- Retail employment
- Office employment
- Industrial employment
- Number of households with income $0-15k (See *Note*)
- Number of households with income $15-25k
- Number of households with income $25-35k
- Number of households with income $35-50k
- Number of households with income $50k+
- Total Area (sq mi)
- Office Area (sq mi)
- Post High School Enrollment
- Retirement zone flag
- Sky Harbor Enplanements
- Number of dwelling units age 0-9 (years)
- Number of dwelling units age 10-19 (years)
- Number of dwelling units age 20-30 (years)
- Number of dwelling units age 30+ (years)
- Number of multi-family dwelling units
- Number of single-family dwelling units

Note: In 1995 constant dollars. The cut points may be redefined for this study.

The specific list will be finalized in this task.

The CONSULTANT will develop and document a base set of socioeconomic data for the year 2000 for reference and for use in developing alternative growth scenarios. Department of Economic Security (DES) and MAG socioeconomic data may provide the starting point for this analysis. Data from the 2000 census or other relevant sources as available will be obtained for this task.

The CONSULTANT will generate the current Pinal County population and housing data set using the 2000 census block data. The CONSULTANT will generate employment data using the Pinal County Transportation Study and the Casa Grande Transportation Study employment data as an initial base. The CONSULTANT will coordinate with MAG staff throughout the development process.

In addition, the CONSULTANT will develop alternative growth projections. Both moderate and high growth scenarios will be explored. The specific years by which the population targets are reached is secondary to the growth totals for the purposes of this analysis. The CONSULTANT will

identify control totals for the study area and provide data by traffic analysis zone. At least three separate forecast scenarios will be provided:

(1) moderate growth, which may be based on current plan or trend (which is itself based on DES county control totals),
(2) alternative higher growth, and
(3) maximum growth conditions.

The CONSULTANT will coordinate with MAG and participating jurisdiction staff to identify threshold populations, other control totals, and (for purposes of modeling only) associated target year for each scenario. In preparation for the alternative growth projections, the CONSULTANT will inventory, gather and review all general plans and the latest developments plans from the jurisdictions in the study area including the Pinal County portion. The CONSULTANT will analyze the collected data and will compare it to DES future estimates. Using the review findings, the CONSULTANT will then update the future demographic variables developed for the Pinal and Casa Grande travel demand models where needed for all of the forecast scenarios. The CONSULTANT will provide copies of the general plans, other documents, notes and analyses assembled as part of this task to MAG.

Additional scenarios may also be considered. For example, consultation with business and development interests may result in suggestions for alternative forecasts to be explored, or different allocations / growth patterns. Sensitivity analyses may also be conducted.

The selection of projections will consider and allow for the transportation model exercise in the next task. Consistency and coordination with the development of projections for the MAG Regional Transportation Plan will be needed. All data will be mapped into an agreed standard GIS format.

The CONSULTANT will identify and evaluate land use, social, and economic impacts for each scenario for each of the build options short-listed and evaluated in Tasks 7 & 8. The general process for each category is as follows:

Land Use Impacts:

- The CONSULTANT will identify the current development trends and the State and/or local government plans and policies on land use and growth in the regional area. This will be done by collecting the area's comprehensive development plan/land use plan and address land use, transportation, public facilities, housing, community services and other areas.
- The CONSULTANT will assess the consistency of the scenarios with the comprehensive development plans adopted for the area and, if applicable, other plans used in the development of the transportation plan.
- The CONSULTANT will present the secondary social, economic and environmental impacts of any substantial, foreseeable, induced development for each scenario. This discussion will include adverse effects on existing communities.

Social Impacts:

- The CONSULTANT will identify any beneficial and adverse changes in neighborhood or community cohesion associated with each of the scenario.
- The CONSULTANT will address splitting neighborhoods, isolating a portion of the neighborhood or ethnic/racial group, generating new development, changing property values, separating residents from community facilities, etc.
- The CONSULTANT will address indirect and direct changes in traffic patterns and accessibility, impacts on school districts, recreation area, churches, businesses, police and fire protection and other public emergency services.

Social impacts will include a discussion on highway and traffic safety, as well as overall public safety.

Economic Impacts:

- The CONSULTANT will describe the short-term and long-term economic impacts of the three forecast scenarios on the regional and local economy. This will include the effect of the scenario on development, tax revenues and public expenditures, employment opportunities and accessibility.
- The CONSULTANT will address the impacts of the proposed action on the economic vitality of existing highway-related businesses and the resultant impact, if any, on the local economy.

Given the ambitious scope of this task, the CONSULTANT will monitor the project budget very closely to ensure that there are no cost overruns for this task.

Sub-Task 4(b): Evaluate Environmental Justice and Title VI

In keeping with federal and state requirements, environmental justice and Title VI named population groups within the study area will be identified in this task for later consideration in this study in the evaluation of transportation improvement options. This consideration will not limit the consultation or consideration of other populations.

Comparisons of the population in the study area of the named groups, and any other groups as appropriate, to regional averages will be made to identify relatively high areas of concentration of these named populations. Separate GIS-based maps presenting the results of the analysis for each population group will be prepared.

Compliance with all applicable federal, state and local requirements for this analysis, including to the extent feasible those contained in draft regulations currently undergoing public review, will be demonstrated.

The CONSULTANT will describe the effects of the alternative scenarios on the elderly, handicapped, transit-dependent and minority and ethnic groups.

Task Four Products:

- Socioeconomic data sets in: (a) GIS polygon format, for input to the MAG GIS system, and (b) as needed to provide input for the MAG travel model for three alternative growth scenarios and the base year 2000, in text format. At least one interim year data set per scenario will be required as part of this task, to address alternative growth patterns, and also to support later tasks to recommend ranking and phasing of specific projects. The GIS coverages will be in ArcInfo Compatible format [NAD83, units = feet].
- Socioeconomic data for use in Title VI / Environmental Justice assessments, in GIS format.
- Working Paper # 2 which describes and maps in GIS the socioeconomic data for the study area and the methodology used to produce it, as well as the findings & maps of the Title VI / Environmental Justice assessment. The Paper should contain the inventory of available GIS data for the study / modeling areas. Copies of all general plans, existing land use/aerial photos, development plans, and notes will also be delivered with the working paper. Any analyses conducted for this study will be documented and delivered with the Paper.

Task Five: Document Current and Projected Transportation Facilities and Conditions

The CONSULTANT will document current transportation facilities and demand, as well as future conditions for each mode for each of the growth scenarios defined in the previous task.

Specific activities will include the following:

- Existing Facilities - Develop and implement a data collection plan, such as roadway counts and turning movements, if needed to support the modeling activities for this study. The CONSULTANT will field review key roadways, transit systems and bicycle and other facilities including ITS to provide a basis for analysis and foundation for the future conditions and study recommendations. In addition, at a minimum, levels of service, general condition of roadway, transit operations, bicycle facilities, inter-modal terminals/transfer facilities and a basic description of the traffic control systems in the area will be prepared.

  The CONSULTANT will identify deficiencies including: level of service, roadway capacity, transit service, ITS, inter-modal linkages, bicycle and pedestrian facilities, established design standards, and safety. For the latter, accident data will be analyzed to identify potential safety issues to be addressed in later stages of the study.

- Travel Model Preparation - To have a complete picture of the Southeast Maricopa/Northern Pinal study area, the MAG transportation model area will be expanded. The CONSULTANT will identify roadways in Pinal County to be incorporated into the MAG travel model for this study, consistent with the TAZ system identified in Task Four.

  Necessary network modifications will be illustrated and summarized for MAG staff to use in expanding the EMME/2 network. Modeling for the study will be conducted by MAG

staff. All model preparation needed for the study including socioeconomic data, trip generation files and data for coding of transportation networks will be developed by the consultant and subject to approval by MAG staff.

The following are general steps to be applied to extend the Maricopa/Pinal transportation model for all modeling years:

- Agree on extent of network and modes
- Create Transportation Analysis Zones (TAZ)
- Resolve number of TAZ, link limitations
- Develop and provide the socioeconomic data to MAG (see Task 4)
- Use Pinal County TransCAD Model for network input
- Provide network coding data in format required for MAG EMME/2 Model.

The list of parameters to be modeled for all scenarios will be established at the beginning of this task, along with any requirements for initial analysis and electronic data structures. A sample list of parameters is attached to this Appendix. For this study the parameters to be modeled will include at a minimum:

- Person-trips by trip type & facility type
- Vehicle Total Trips - Auto, Transit, Goods Movement (Truck), by trip type & facility type
- Level of Service (by facility type / major intersection) (freeway & intersection LOS)
- Volumes - Auto, Transit, Goods Movement (Truck), by trip type & facility type, major intersection
- Speeds - Auto, Transit, Goods Movement (Truck), by facility and trip type
- Travel Times - Auto, Transit, Goods Movement (Truck), by facility and trip type
- Delay - Auto, Transit, Goods Movement (Truck), by trip facility type / major intersection
- Capacity Miles by facility type
- Lane miles by facility type
- Center-line miles by facility type
- Vehicle-Miles-Traveled, for auto, truck and transit, by facility type

Trip types typically may include home-based work (commutes), home-based other, non-home based work, non-home based other, and/or other categories as determined in the course of the study. Mode splits will also be provided where informative, including single occupant vehicle, multi-occupant private vehicle (non HOV in the sense of not using HOV lanes although they qualify), transit, non-motorized, and other.

Road facility types includes freeway, expressway, arterial, collectors and other. For levels of service and volumes, major intersections should also be addressed. Depending on information needs, modeling may in the course of the study focus on freeway, expressway and arterial/other.

- Future Base Network - The CONSULTANT will develop a future base network based on regional and community long range plans, as well as input from the study team. The future base network should be based on the existing long range transportation plans, and not include new projects to be identified in later tasks in this study. Transportation scenarios that include new projects identified in the course of this study will be specified in later tasks. Travel on the future base network will be simulated for each growth scenario identified in Task 4.

  The future deficiencies to be documented include (but are not limited to): capacity and levels of service for essential highways, transit, bicycle and other modes; quality and need for inter-modal linkages; contrast systems with existing standards and the general feasibility of meeting those standards; and safety considerations at key locations. Other deficiencies to be documented may be added in the course of the project. In addition, area constraints will be documented including environmental concerns and utility conflicts. Based on consensus from the study team, one set of forecasts will be carried forward to use as a basis for comparison during the evaluation of alternatives.

- GIS Data - In addition to other data that will be specified in the course of the project, the CONSULTANT will develop functional roadway classification, transit service, and alternative mode facility GIS-based maps for the existing and planned systems. Aerial photos may be used to augment the maps. Key data will be mapped in an agreed standard GIS format.

Task Five Products:

- Working Paper #3 which identifies current and projected future transportation facilities and conditions.
- Travel model coding for the future base transportation network for the expanded modeling area and zone system, , in a format agreed by the MAG Modeling Manager and Project Manager.
- GIS maps and mapping capability for existing and future transportation facilities, including existing ArcView files for current and planned networks.

Task Six: Identify Major Transportation Issues

The CONSULTANT will identify and prioritize major transportation issues for the study area. In the Task Seven, options for transportation investments will be developed to address the issues identified and ranked in Task Six. Task Six will build upon the reviews and socioeconomic and transportation projections developed in previous tasks, feedback received, and the technical input of the consultants. Public, agency and stakeholder consultation will also be a key element of this task. Interviews or surveys with key agency officials and staff will be conducted prior to an agency and stakeholder workshop to be held to review the draft Major Issues working paper to be prepared for this task.

The consideration of the relative priority of the issues within the study area should also consider the appropriate time-frames for solutions. Opportunities for staged or phased construction of recommended options therefore need to be considered, in order to better position any proposed projects to compete for available funding. The issues therefore should be categorized as near (for the five-year program), mid- (to fifteen years) or long-term (twenty years or more).

Specific evaluation criteria or performance measures may also be recommended for application in the next project task in which alternatives for transportation improvements for roads, transit and alternative modes will be developed and evaluated. These criteria would supplement any other criteria that would be specified in that task or in the modeling task.

In preliminary inter-agency meetings conducted for the study, a number of potential issues were identified. The CONSULTANT will use these issues as a starting point for obtaining input and compiling information on the key issues. These issues are listed below:

Coordination Issues:

- Rapid population growth.
- Need for planning to consider growth across County boundaries, covering Apache Junction, Chandler, Gilbert, Mesa, Maricopa County, Pinal County and Queen Creek.
- Need for new transportation infrastructure, which, considering growth in neighboring jurisdictions, could include recommendations for additional capacity on the Santan Freeway, Superstition Freeway and arterial streets.
- Need for an area study to be completed for input into any upcoming election on transportation funding.
- Coordinated planning with the Central Arizona Association of Governments (CAAG).
- Continued expansion of the Maricopa urban area into Northern Pinal County.
- Representatives of Florence, Coolidge, and Eloy should participate in the study.
- Involvement of the Gila River Indian Community will be needed.
- The Agency Forum concept and overall process was supported.

Technical Issues:

- Alternatives / relievers south of US 60 / Santan (east-west) are desired. A reliever or alternative route is also desired for US 60 in the Gold Canyon area.
- Added capacity to US 60 east to Superior is desired within 10 years. Adjacent surface street improvements are also desired.
- Alternatives / relievers for I-10 (north-south) are also needed. Extension of Maricopa Road (SR 347) south to connect to I-8 was noted as one option that could bring relatively large benefit at low cost.
- Added capacity for I-10 is desired, as addressed in the ADOT study just completed.
- Improvements to feeder routes for I-10 and US 60 are also important.
- Extension of Price Road south to connect to I-10 is one option that could be considered.
- Other growth corridors include Hunt Highway, SR 287 and SR 347.
- Substantial improvements are desired for Pinal County surface streets, many of which are

unpaved currently.

- Rural transit needs are important to review. Dial-a-Ride / demand responsive transit is a key area.
- Expansion of the MAG transportation model to cover most or all of Pinal County is needed to model the large study area. Pinal County does not currently have modeling capability but can provide GIS-based socioeconomic data. Casa Grande is just completing a study that will provide some traffic data. Growth north from Tucson contributes to pressures in Pinal County south of Eloy.
- Williams Gateway Airport access to the Santan via Hawes interchange is an issue.
- A new passenger terminal serving 4 to 7 million passengers / year is planned.
- Use of the land being made available by the closure of the GM Proving Grounds (near the Airport) is an issue. Mesa is already working with GM to develop plans for primary arterials for the area, which is slated for residential (12-15 thousand homes) and commercial development.
- Improvements to the Hawes Road interchange were suggested to link to a parkway along Williams Field Road to serve the proving grounds area and beyond, perhaps to Pinal County and possibly Gold Canyon. ADOT noted that 30% design plans for all system traffic interchanges are scheduled for completed by the end of the year.
- Mesa suggested that its design be such that it allows to the extent possible future improvements.
- Rapid development south and east of the Queen Creek is an issue. Johnson Ranch is already being built. A high capacity north-south route is desired in this area (Ironwood).
- Commercial development and possibly some light industrial is included. Mostly or many are “empty-nesters", with relatively fewer retirees or younger families. Extensive new development is being planned outside of Queen Creek in Pinal County.
- With the current lack of north-south connections, travel may funnel through Queen Creek.
- Prison employees account for high usage of van-pools in Florence. Expansions to prisons are expected.
- Truck traffic impacts are a concern. There are several quarries in the Northern Pinal area. Typical destinations are Mesa, Apache Junction and Gold Canyon.
- Casa Grande has 35 thousand units approved. They are trying to maintain a balanced age cohort distribution. They already have a thousand acre master planned community that is or will be age-restricted.
- Consistent participation by the development community is providing an adequate transportation system is important.

<u>Funding Issues</u>:

- Planning effort needed for region even if funding has to be phased in over time.
- Possible funding sources for the recommended projects should be addressed in the study.
- The Pinal County sales tax sunsets in January 2007. An extension will be sought for
- future transportation improvements, with any new funds to be shared with the municipalities.

General Issues

- Major Access Controlled Facilities: Needs for added capacity for freeways, expressways and parkways should be addressed in the study.
- Arterial Grid: Needs and issues are to be identified in the course of the study. Continuity of the arterial grid system across jurisdictions, "scalloped" streets, and access control issues should be addressed.
- Transit: Local bus, express bus, and rail needs and integration with the regional system should be addressed. Both fixed route and demand responsive (e.g. dial-a-ride) needs should be considered. Shared right of way use may be considered. Park and ride needs including access to regional roads should be addressed. Cost-effective alternatives should be considered.
- Goods Movement: Transport within and through the area should be addressed. The need for any truck routes or policies should be specifically addressed.
- Surface transportation needs for any airports should be addressed, but the air traffic or other operational requirements of the airport itself are not part of the study.
- Utility Coordination - Needs and issues affecting transportation corridors must be addressed.
- Intelligent Transportation Systems (ITS): Needs and issues for all modes should be addressed.
- Bike and Pedestrian Facilities. Needs and issues, including possibly design criteria, should be addressed.
- Access Control: Needs and issues along major transportation facilities need to be addressed. Recommendations for access control policies may be made.
- Right of Way Protection: The study should address any potential needs for right of way protection for new or expanded transportation corridors or facilities, including interchanges and potential transit corridor needs. Early acquisition opportunities to reduce long term costs should be identified.
- Safety: Analyze accident data on specific roadway segments and intersections. Make recommendations as appropriate to improve safety on regional transportation facilities.
- Economic Factors: As part of a cost-benefit assessment, economic factors should be addressed. These factors should also be considered in any recommendations.
- Costs: Funds are always limited, so costs should be evaluated. Both capital and operating and maintenance costs should be considered. Cost-benefit assessments should be prepared for each alternative set of recommendations for improvements.
- Staging: Opportunities to stage critical improvements that fit into a long-term concept and provide needed flexibility for funding should be addressed.
- Land Use: Transportation-related issues should be addressed.
- Environmental Issues. Needs and issues satisfying all applicable local, state and federal requirements should be addressed. Major visual issues including general landscaping issues and other aesthetic considerations should be addressed.
- Neighborhood Impacts. Protection of neighborhoods is an important issue. Safety, noise and aesthetics that may be associated with some major transportation projects should be considered. Special needs such as elderly mobility should be considered, e.g. elderly mobility zones.

- Downtown activity centers should be addressed. However, local community identity should be maintained. Local issues should be left to the local jurisdictions to address, although they may be commented on where warranted.
- Consideration and integration as appropriate of recommendations or concepts from relevant regional, area and corridor studies.

Task Six Products:
- Working Paper #4 which defines the major transportation issues
- Initial list of evaluation criteria

Task Seven: Develop and Evaluate Options

The CONSULTANT will develop and evaluate options for roadway, transit and alternative mode investments, with the goal of reaching a consensus and selecting preferred near and long term improvement concepts for the area. The options will include a no-build alternative as well as several build alternatives (no less than three) that address the issues identified in the previous phase of the study.

The evaluation and prioritization of projects comprising each improvement option will be conducted using standard criteria that, for projects within the MAG region, are consistent with those established or reasonably expected to be considered for the RTP. The choice and application (weighting and/or sequencing) of the criteria are subject to review and approval by the MAG Project Manager before being applied in any evaluations of options for this study.

The options will be evaluated first based on key criteria, to establish general feasibility. These will focus on potential fatal flaw issues, and include costs, acceptability to local jurisdictions, environmental issues, previous decisions and commitments, right-of-way needs, and other criteria or performance standards as agreed. Any other criteria that are also being used in the RTP will also be applied. Options with high feasibility will be short-listed for further consideration. Modeling may or may not be needed for this initial review.

The short-listed options will then be evaluated in detail. The criteria may include those from the initial evaluation, refined as needed, as well as: demand, level of service, cost (refined estimates for capital, operation, and maintenance costs), cost-effectiveness, economic factors and quality of life, environmental impacts, community impacts, modal choices, service to the under served, feedback received in consultation, safety, and consistency with regional and local plans. All short-listed options will be modeled. All applicable local, state and federal requirements should be met in this study, requiring that the federal and related environmental justice and Title VI requirements be key criteria.

The options are expected to consist of a mix of roadway, transit and other alternative mode investments. Each option will address the freeway system; arterial networks; transit facilities, ITS, area of coverage and service levels; and bicycle and pedestrian facility networks. Key issues such

as access control (including frequency of signalized intersections) and noise mitigation may also be addressed. Other related issues, such as neighborhood traffic control, pedestrian friendly design and parking controls/restrictions, and special population needs such as elderly mobility may also be discussed for each option but are not a focus of this study. Coordination with regional and local transportation and related plans, including alternative mode plans, is essential.

The roadway options will consider:

- Freeway, expressway, super-street, arterial or other roadway capacity needs, including new capacity, connectivity, and arterial grid continuity.
- Intersection needs
- Access control
- Intelligent Transportation System (ITS) Applications, including synchronized signalization.
- Goods Movement
- Inter-modal connections
- Major Drainage Requirements
- Visual Impacts - Landscaping, Aesthetics, Scenic Corridors
- Right of Way Needs - Potential cost savings through early acquisition. Right of way protection is important for road and transit corridors, including traffic interchanges.

The transit options will consider:

- Fixed-guideway transit
- Right of Way Needs. Potential cost savings through early acquisition.
- Express bus service
- Local bus service (major routes)
- ITS applications
- Inter-modal links, including transit centers and park and ride lots. Integration with the regional system.
- Other cost-effective alternatives, such as vouchers for taxis.

The other alternative mode options will consider:

- Pedestrian / roller-blade
- Bike / Trail
- Localized issues, such as golf cart access.
- Multi-modal aspects of road and transit facilities.
- Right of Way Needs. Potential cost savings through early acquisition.
- Telecommuting, including telework centers
- Potential ITS applications

In general, extensive use of graphics presenting the options is expected. Roadway cross-sections will be needed. Additionally, schematics or maps will also be needed for public presentation purposes that show key features of the options, such as alignment and number / length of lanes for new or improved roadway facilities, or alignments for new transit facilities. The results of the evaluations should be summarized in an matrix.

The evaluation will result in the selection of a recommended or preferred option for the area. The recommended option may be one of the options considered or a combination of options. The recommended option will be modeled and costs estimated. Staging or phasing of the design, right of way acquisition and construction of proposed transportation improvement projects or investments will be addressed in detail. The benefits of the recommended or preferred option will be summarized.

The regional context for the proposed improvements or set of improvements should also be addressed, specifically noting where any improvements would require changes to the regional plan or its policies or priorities.

Task Seven Products:

- Working Paper #5 which describes and evaluates the options for the Southeast Maricopa / Northern Pinal County Area and recommends a preferred option for the area.

Task Eight: Detail Recommendations

The CONSULTANT will develop a detailed list of study area or sub-regional priorities for multi-modal transportation investments, which, for the MAG region, will be reviewed and evaluated as part of the RTP process. Refine the staging or phasing of implementation of improvements or investments, and develop corresponding cost estimates. A table showing the recommended project phases, costs and priorities, along with suggested funding/implementation responsibilities (local, county, regional, and state), will be developed.

The recommended improvements will be overlaid on aerial photographs. The design will include proposed facility additions or other improvements, transit facility and service additions or other improvements, ITS improvements, safety and security improvements, major drainage facilities, areas of right-of-way acquisition, access control measures, bicycle/trail/pedestrian facilities, and other key features as specified in the course of the study.

A summary document will be developed and widely distributed that makes use of high quality graphics and maps to present the study process including consultation, alternatives considered, recommendations and underlying bases for the recommendations, costs and project priorities and next steps, including input for the MAG region into the RTP process.

Update the evaluation data for the recommended projects as needed for the regional planning processes. To the extent feasible, for MAG region projects, collect and prepare as needed any additional data known to be needed for the RTP. Include these data in the project database and transmit them to the MAG RTP project and respond to any initial inquiries on the data and methodologies from the RTP project.

Task Eight Products:

- Working Paper #6 which details recommended transportation facility or service improvements, including improvement locations overlaid on aerial photographs (where available) and a discussion of methodology.
- Recommendations Summary document which describes study process and recommendations..

Task Nine: Prepare Final Report

From the working papers prepared for each task, the CONSULTANT will prepare the final report. The final report will not be a simple compilation of working papers, but will be edited as needed for quality control, requested revisions, and consistency in presentation, content, detail, graphics, writing style and general readability. An Executive Summary will be prepared that is comprehensive and written for a general audience. The draft final report will undergo review before official agency approval.

The CONSULTANT will provide an area transportation database that contains transportation-related information developed for this project as well as regional data, such as data on regional land use, freeways, arterial network, and transit services. The database will be a deliverable for later use with regional GIS applications, and should be designed to be compatible for this purpose. Coordination with the development of GIS databases for other RTP area studies will be required.

Potential elements of the database include, for current and future years: aerial photos, transit facilities and service levels, roadway number of lanes, average daily traffic, costs (separately for capital, operating, maintenance, and further subcategories, calculated using other data maintained in the database such as pavement and structure conditions), bridges and other major structures, signalized intersections, socioeconomic and land use data, right of way, adjacent land ownership, roadway or facility ownership, ITS implementation, drainage, environmental data, accidents, transit services and ridership, bikeways and trails, pedestrian level of service, inter-modal facilities, goods movement facilities including terminals and other common destinations, programmed and planned improvements, and other data to be established in the course of the study. The final selection of data to be include will be addressed in the study.

Task Nine Products:

- Final Report (100 printed copies and 300 copies of the CD-ROM containing the report and other project material such as the GIS data and files, and the project website, with a easy to navigate table of contents page that provides direct links to key sections of project documents).
- Executive Summary (250 copies)
- Study area GIS database, designed for use with the MAG GIS system and use by local jurisdictions participating in the study.
- Final Website

ATTACHMENT TO APPENDIX A
SAMPLE LIST OF TRANSPORTATION PARAMETERS TO BE MODELED

Memorandum

To: Eric Anderson
From: Mark Schlappi
Date: 9/6/01
RE: MOE's

This memo includes measures that should be consider for inclusion in the MAG planning process. These measures can be divided into four categories:

1. Input information
2. Plan output measures
3. System performance measures
4. User Benefits

I see travel as a derived demand which is a function of the population and Employment forecasts. The output measures describe the transportation facilities provide by our plans. The system measures describe how many people use the facilities and their level of service. Then the user benefits describe how the facilities benefit the population.

1. Input information
   a. Population or households
      i. Total by year
      ii. Density by TAZ by year
      iii. Growth between study years
   b. Zero Vehicle households, low income, and 55+households??
   c. Employment
      i. Total by year
      ii. Density by tAZ by year
      iii. Growth between study years
   d. Person Trips by mode and purpose(work and non-work)
      i. Regional
      ii. By tAZ (productions and attractions per square mile)
   e. Desire lines of travel by mode
   f. Unconstrained corridor demand (about 4 mile spacing)
   g. Transportation facilities
      i. Highways
      ii. Transit routes
2. Plan output measures
   a. Streets
      i. Lane miles by facility type
      ii. Centerline miles by facility type

   b. Transit
      i. Route miles by type
      ii. Revenue miles by type
      iii. Hours of operation
      iv. Headways
      v. Station locations

c. Park & ride Lots
    i. Location
    ii. Lot size
d. Bike routes
    i. Miles by type

3. System performance measures
a. Highway
    i. Total VMT by facility type, vehicle type, and by GL (geographical location)
    ii. Freeway VMT
        (1) PM Peak hour by LOS
        (2) Duration of LOS F
        (3) vehicle type
            (a) light
            (b) medium
            (c) heavy
    iii. Freeway volumes (by link)
        (1) PM Peak hour by LOS
        (2) daily
        (3) vehicle type
    iv. Freeway Lane miles by PM Peak hour LOS
    v. Number of Major intersections by LOS
        (1) PM Peak hour by LOS
        (2) Duration of LOS F
    vi. Arterial volumes (by link)
        (1) PM Peak hour by LOS
        (2) daily
        (3) vehicle type
    vii. Total PM Peak hour delay by facility type and by GL
    viii. PM Peak hour speed by facility type and by GL
    ix. Screen line summaries of volumes
    x. Select link analysis to show users of specific transportation links
    xi. Select zone analysis to show origins and destinations of trips
    xii. Turning movement analysis to show turning lane demand at intersections
b. Transit
    i. Bus
        (1) Daily regional ridership
        (2) Boardings
        (3) Transfers
        (4) Person miles traveled
        (5) Mode of access
    ii. Express Bus
        (1) Daily regional ridership
        (2) Boardings
        (3) Transfers
        (4) Person miles traveled
        (5) Mode of access
    iii. LRT
        (1) Daily regional ridership
        (2) Boardings
        (3) Transfers

(4) Person miles traveled
(5) Mode of access

4. User Benefits
a. Average trip length (time) by mode
i. HBW
ii. Other
b. City to city travel times by mode
c. Percent of users with more than one modal choice
d. Percent of transit dependent pop served
e. Percent of work force that can reach workplace in transit within 1 hour with no more than 2 transfers
f. Perceived user travel times and savings (FTA User benefit) by mode and household vehicles
i. HBW
(1) productions by taz
(2) attractions by taz
ii. Other
(1) productions by taz
(2) attractions by taz
g. Transit accessibility
i. Average transfer time
ii. Households within walking distance
(1) 1/4 mile of bus route
(2) ½ mile of bus route
(3) 1/4 mile of LRT station
(4) ½ mile of LRT station
iii. Low income households within walking distance
(1) 1/4 mile of bus route
(2) ½ mile of bus route
(3) 1/4 mile of LRT station
(4) ½ mile of LRT station
iv. Jobs within walking distance
(1) 1/4 mile of bus route
(2) ½ mile of bus route
(3) 1/4 mile of LRT station
(4) ½ mile of LRT station
v. Households within 5 miles on park & ride lots